

**Montana Board of Oil and Gas Conservation  
Environmental Assessment**

**Operator:** Encore Energy Partners Operating, LLC  
**Well Name/Number:** Brutus 1-8  
**Location:** SE SE Section 8 T24N R57E  
**County:** Richland, **MT;** **Field (or Wildcat)** Lone Tree Creek

**Air Quality**

(possible concerns)

Long drilling time: No, 20 to 30 days drilling time.

Unusually deep drilling (high horsepower rig): No, triple derrick drilling rig to drill a vertical Red River Formation well test to 12,500' TD.

Possible H<sub>2</sub>S gas production: Possible H<sub>2</sub>S gas production (Mississippian, Devonian, Silurian Formations).

In/near Class I air quality area: No Class I air quality area in the area of review.

Air quality permit for flaring/venting (if productive): Yes, DEQ air quality permit required under rule 75-2-211.

Mitigation:

☒ Air quality permit (AQB review)

☐ Gas plants/pipelines available for sour gas

☐ Special equipment/procedures requirements

☐ Other: \_\_\_\_\_

Comments: No special concerns – using triple derrick drilling rig to drill a vertical Red River Formation well test to 12,500' TD. If existing pipeline for gas in the area, associated gas can be gathered or if no gathering system nearby, associated gas can be flared under Board Rule 36.22.1220.

**Water Quality**

(possible concerns)

Salt/oil based mud: Yes, oil based invert drilling fluids will be used on the mainhole.

The surface hole will be drilled with freshwater and freshwater drilling fluids.

High water table: No, no high water table anticipated in the area of review.

Surface drainage leads to live water: No live water, nearest drainage is an unnamed ephemeral tributary drainage to the First Hay Creek, about 1/8 of a mile to the north from this location. First Hay Creek is about 3/8 of a mile to the northeast from this location.

Water well contamination: None, closest water wells are about 1/2 of a mile to the southwest, about 5/8 of a mile to the east, about 3/4 of a mile to the southeast, about 3/4 of a mile to the northwest and about 1 of a mile to the northeast from this location. All other water wells are further than 1 mile from this location in any direction. Depth of this stock and domestic water wells range from 14' to 109'. Surface casing hole will be drilled with freshwater and freshwater drilling fluids. Surface casing will be run and cemented to surface from 1850'.

Porous/permeable soils: No, sandy clay soils.

Class I stream drainage: No Class I stream drainages in the area of review.

Mitigation:

☒ Lined reserve pit

☒ Adequate surface casing

☐ Berms/dykes, re-routed drainage

☒ Closed mud system

☒ Off-site disposal of solids/**liquids** (in approved facility)

\_\_\_ Other: \_\_\_\_\_  
Comments: 1850' of surface casing cemented to surface adequate to protect freshwater zones and to cover the base of the Fox Hills Formation.

### Soils/Vegetation/Land Use

(possible concerns)

Stream crossings: No, stream crossings anticipated, crossing only ephemeral drainages into this location.

High erosion potential: Yes possible high erosion potential on cut and fill slopes, moderate cut, up to 19.1' and moderate fill, up to 13.3', required.

Loss of soil productivity: None, location to be restored after drilling well, if well is nonproductive. If productive unused portion of drillsite will be reclaimed.

Unusually large wellsite: No, a large wellsite 400'X300' location size.

Damage to improvements: Slight surface use is cultivated land.

Conflict with existing land use/values: Slight

Mitigation

- \_\_\_ Avoid improvements (topographic tolerance)
- \_\_\_ Exception location requested
- X Stockpile topsoil
- \_\_\_ Stream Crossing Permit (other agency review)
- X Reclaim unused part of wellsite if productive
- \_\_\_ Special construction methods to enhance reclamation
- \_\_\_ Other \_\_\_\_\_

Comments: Access to location will be over existing county highway #201, existing county road, #338 and existing lease road. An access of 396' will be built off the existing lease road into this location. Oil based invert drilling fluids will be recycled. Completion fluids will be hauled to an authorized Class II Disposal. Drilling cuttings and mud solids will be fly ashed in the lined cuttings pit and buried in the lined cuttings pit with a minimum of 4' of subsoil cover over the top of the cuttings. No special concerns.

### Health Hazards/Noise

(possible concerns)

Proximity to public facilities/residences: Nearest residences are about 1.125 miles to the north, about 1.125 miles to the northeast, about 1.25 miles to the north northwest, about 2 miles to the northwest and about 1.25 miles to the southeast from the location. The town of Fairveiw, Montana is about 1 miles to the east. The town of Sidney, Montana is about 13.5 miles to the southeast.

Possibility of H<sub>2</sub>S: H<sub>2</sub>S potential is slight ((Mississippian, Silurian Formations). Devonian Duperow Formation has high concentrations of H<sub>2</sub>S.

Size of rig/length of drilling time: Triple drilling rig/short 20 to 30 days drilling time.

Mitigation:

- X Proper BOP equipment
- \_\_\_ Topographic sound barriers
- \_\_\_ H<sub>2</sub>S contingency and/or evacuation plan
- \_\_\_ Special equipment/procedures requirements
- \_\_\_ Other: \_\_\_\_\_

Comments: Adequate surface casing (1850' of 9 5/8" cemented to surface) and operational BOP (5000 psig double ram and annular BOPs) should mitigate any problems. No concerns.

### **Wildlife/recreation**

(possible concerns)

Proximity to sensitive wildlife areas (DFWP identified): None identified.

Proximity to recreation sites: None identified.

Creation of new access to wildlife habitat: None

Conflict with game range/refuge management: None

Threatened or endangered Species: Species identified as threatened or endangered are the Pallid Sturgeon, Interior Lease Tern, Whooping Crane and Piping Plover.

Candidate species are the Greater Sage Grouse and the Sprague's Pipit. MTFWP Natural Heritage Tracker website lists one (1) species of concern. It is the Whooping Crane.

Mitigation:

\_\_\_ Avoidance (topographic tolerance/exception)

\_\_\_ Other agency review (DFWP, federal agencies, DSL)

\_\_\_ Screening/fencing of pits, drillsite

\_\_\_ Other: \_\_\_\_\_

Comments: The surface ownership is private cultivated land. There may be species of concern that maybe impacted by this wellsite. We ask the operator to consult with the surface owner as to what he would like done, if a species of concern is discovered at this location. The Board of Oil & Gas has no jurisdiction over private surface lands.

### **Historical/Cultural/Paleontological**

(possible concerns)

Proximity to known sites None identified.

Mitigation

\_\_\_ avoidance (topographic tolerance, location exception)

\_\_\_ other agency review (SHPO, DSL, federal agencies)

\_\_\_ Other: \_\_\_\_\_

Comments: On private cultivated surface land. There may be possible historical/cultural/paleontological sites that maybe impacted by this wellsite. We ask the operator to consult with the surface owner as to his desire to preserve these sites or not, if they are found during construction of the wellsite. The Board of Oil & Gas has no jurisdiction over private surface lands.

### **Social/Economic**

(possible concerns)

\_\_\_ Substantial effect on tax base

\_\_\_ Create demand for new governmental services

\_\_\_ Population increase or relocation

Comments: No concerns.

**Remarks or Special Concerns for this site**

Drill a vertical Red River Formation well test to 12,500'TD. No concerns.

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**Summary: Evaluation of Impacts and Cumulative effects**

No significant long term impacts expected, some short term impacts will occur.

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I conclude that the approval of the subject Notice of Intent to Drill (does/**does not**) constitute a major action of state government significantly affecting the quality of the human environment, and (does/**does not**) require the preparation of an environmental impact statement.

Prepared by (BOGC): \s\ Steven Sasaki  
(title:) Chief Field Inspector  
Date: May 31, 2012

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**Other Persons Contacted:**

Montana Bureau of Mines and Geology, GWIC website  
(Name and Agency)  
Water wells in Richland County  
(subject discussed)  
May 31, 2012  
(date)

US Fish and Wildlife, Region 6 website  
(Name and Agency)  
ENDANGERED, THREATENED, PROPOSED AND CANDIDATE SPECIES  
MONTANA COUNTIES, Richland County  
(subject discussed)

May 31, 2012  
(date)

Montana Natural Heritage Program Website (FWP)  
(Name and Agency)  
Heritage State Rank= S1, S2, S3, T24N R57E  
(subject discussed)

May 31, 2012  
(date)

If location was inspected before permit approval:

Inspection date: \_\_\_\_\_

Inspector: \_\_\_\_\_

Others present during inspection: \_\_\_\_\_